

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Brian R. Murphy et al.

Serial No.: 09/444,221

Group Art Unit: 1642

Filing Date: November 19, 1999

Examiner: B. Brumback

For: PRODUCTION OF ATTENUATED RESPIRATORY SYNCYTIAL VIRUS  
VACCINES FROM CLONED NUCLEOTIDE SEQUENCES

DATE OF DEPOSIT: 4/12/2002

I HEREBY CERTIFY THAT THIS PAPER IS BEING  
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TYPED NAME: Jeffrey J. King  
REGISTRATION NO.: 38,515

BOX DSD  
Commissioner for Patents  
Washington, DC 20231

ESTABLISHMENT OF RIGHT OF ASSIGNEE TO TAKE ACTION  
AND  
REVOCATION AND POWER OF ATTORNEY

Dear Sir:

The undersigned is empowered to act on behalf of the assignee below (the "Assignee"). The original assignment was recorded in the parent application U.S. Serial No. 08/892,403, filed July 15, 1997, now U.S. Patent No. 5,993,824. The assignment was recorded in the Patent and Trademark Office on October 6, 1997 at Reel 8775, Frame 0651. A copy of that submission is attached. This Assignment represents the entire chain of title of this invention from the Inventors Brian R. Murphy, Peter L. Collins, Stephen S. Whitehead, Alexander A. Bukreyev, Katalin Juhasz, and Michael N. Teng to the Assignee.

I declare that all statements made herein are true, and that all statements made upon information and belief are believed to be true, and further, that these statements were made with the knowledge that willful, false statements and the like so made are

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punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that willful, false statements may jeopardize the validity of the application, or any patent issuing thereon.

The undersigned hereby revokes any previous powers of attorney in the subject application, and hereby appoints the below listed registrants of National Institutes of Health Offices of Technology Transfer, 6011 Executive Boulevard, Suite 325, Rockville, MD 20852, telephone (301) 496-7056, as its agents and attorneys with full power of substitution and revocation to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith. This appointment is to be to the exclusion of the inventor(s) and his/her/their attorney(s) in accordance with the provisions of 37 C.F.R. § 3.71.

<u>James C. Haight</u>	Reg. No. <u>25,588</u>
<u>David R. Sadowski</u>	Reg. No. <u>32,808</u>
<u>Jack Spiegel</u>	Reg. No. <u>34,477</u>
<u>Susan S. Rucker</u>	Reg. No. <u>35,762</u>
<u>Stephen Finley</u>	Reg. No. <u>36,357</u>
<u>Steven Ferguson</u>	Reg. No. <u>38,488</u>
<u>John Peter Kim</u>	Reg. No. <u>38,514</u>
<u>Norbert Pontzer</u>	Reg. No. <u>40,777</u>
<u>Richard U. Rodriguez</u>	Reg. No. <u>45,980</u>
<u>Marlene Shinn</u>	Reg. No. <u>46,005</u>
<u>Dale Berkley</u>	Reg. No. <u>32,319</u>
<u>Catherine M. Joyce</u>	Reg. No. <u>40,668</u>

The National Institutes of Health Office of Technology Transfer has been duly delegated responsibility for such patent matters under the authority of the Department of Health and Human Services Secretary Louis W. Sullivan's May 21, 1991, memorandum appearing in the Friday, June 7, 1991, Federal Register Notices at Vol. 56, No. 110, pp. 26418-26419. The undersigned is authorized to exercise such authority in this matter.

Done on this 11 day of MARCH, 2002, at Rockville, Maryland.

UNITED STATES DEPARTMENT OF  
HEALTH AND HUMAN SERVICES

By: Jack Spiegel

Printed Name: JACK SPIEGEL

Registration No.: 34,477

for: Dr. Jack Spiegel, Director, *OTTT*  
Office of Technology Transfer  
National Institutes of Health  
6011 Executive Boulevard, Suite 325  
Rockville, MD 20852  
Telephone (301) 496-7056  
Facsimile (301) 402-0220

DHHS CASE NO. E-142-96/3



617634-0005106  
UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
SWP/17716

DECEMBER 12, 1997

TOWNSEND AND TOWNSEND AND CREW LLP  
JEFFREY J. KING  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834  
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UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, NORTH TOWER BUILDING, SUITE 10C35, WASHINGTON, D.C. 20231.

RECORDATION DATE: 10/06/1997

REEL/FRAME: 8775/0651  
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:  
MURPHY, BRIAN R.

DOC DATE: 09/15/1997

ASSIGNOR:  
COLLINS, PETER L.

DOC DATE: 09/15/1997

ASSIGNOR:  
WHITEHEAD, STEPHEN S.

DOC DATE: 09/15/1997

ASSIGNOR:  
BUKREYEV, ALEXANDER A.

DOC DATE: 09/29/1997

ASSIGNOR:  
JUHASZ, KATALIN

DOC DATE: 09/29/1997

ASSIGNOR:  
TENG, MICHAEL N.

DOC DATE: 09/15/1997

ASSIGNEE:  
HEALTH AND HUMAN SERVICES, UNITED STATES OF AMERICA, THE  
6011 EXECUTIVE BOULEVARD, SUITE 325  
ROCKVILLE, MARYLAND 20852

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TOWNSEND & TOWNSEND  
LLP

8775/0651 PAGE 2

SERIAL NUMBER: 08892403  
PATENT NUMBER:

FILING DATE: 07/15/1997  
ISSUE DATE:

TARA WASHINGTON, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

10/16/97

100565392

PATENTS ONLY

Docket No.

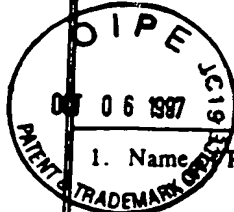
11-06-1997

To the  
Please



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rademarks  
py thereof.



1. Name of Parties conveying an interest:

- (1) Brian R. Murphy
- (2) Peter L. Collins
- (3) Stephen S. Whitehead
- (4) Alexander A. Bukreyev
- (5) Katalin Juhasz
- (6) Michael N. Teng

2. Name and Address of Party receiving an interest:

The Government of the United States of America  
Department of Health and Human Services  
6011 Executive Boulevard, Suite 325  
Rockville, Maryland 20852

3. Description of the interest conveyed:

☒ Assignment      ☐ Change of Name      Other:  
☐ Security Agreement      ☐ Merger

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4. Application number(s) or patent number(s). Additional sheet attached? ☐ Yes ☒ No

If this document is being filed together with a new application, the execution date of the application is:

Execution Date:

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A. Patent Application No.

08/892,403

B. Patent No.(s)

5. Name and address of party to whom correspondence concerning document should be mailed:

Jeffrey J. King  
TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center  
Eighth Floor  
San Francisco, California 94111-3834

6. Number of applications and patents involved:

1

7. Amount of fee enclosed or authorized to be charged:

\$40

8. Deposit account number (attach duplicate copy of this form if paying by deposit account):

20-1430

1

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9. Date of execution of attached document: (1) 9/15/97; (2) 9/15/97; (3) 9/15/97; (4) 9/16/97; (5) 9/29/97; (6) 9/15/97.

10. I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on: October 1, 1997

Signature

Jeffrey J. King, Reg. No. 38,515

Name of Person Signing

**ASSIGNMENT OF PATENT APPLICATION**

JOINT

WHEREAS, BRIAN R. MURPHY of 5410 Tuscarawas Road, Bethesda, Maryland 20816, PETER L. COLLINS of 12304 Village Square, Apt. 401, Rockville, Maryland 20852, STEPHEN S. WHITEHEAD of 7 Prairie Rose Lane, Gaithersburg, Maryland 20878, ALEXANDER A. BUKREYEV of 13103 Elsdale Court, Apt. 102, Rockville, Maryland 20851, KATALIN JUHASZ of 251 Rollins Avenue, #102, Rockville, Maryland 20852 and MICHAEL N. TENG of 12316 Village Square Terrace, #102, Rockville, Maryland 20852, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below identified application for United States Letters Patent:

Title of the Invention: **PRODUCTION OF ATTENUATED RESPIRATORY SYNCYTIAL VIRUS VACCINES FROM CLONED NUCLEOTIDE SEQUENCES**

Filing date: July 15, 1997 Application No.: 08/892,403; and

WHEREAS, THE GOVERNMENT OF THE UNITED STATES OF AMERICA, as represented by the Department of Health and Human Services a corporation, located at 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852, hereinafter referred to as "Assignee," is desirous of acquiring an interest in the invention and application and in any Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts of the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Date:

7/15/97

Brian R. Murphy  
Brian R. Murphy



STATE OF MARYLAND

COUNTY OF Montgomery

On 15th Sept, before me, Brian R. Murphy (insert name of notary public), personally appeared BRIAN R. MURPHY, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, execute the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
RITA A. CAPOBIANCHI  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires February 10, 1998

Signature Rita A. Capobianchi (Seal)

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Date: 9-15-97

\_\_\_\_\_  
Peter L. Collins

STATE OF MARYLAND

COUNTY OF Montgomery

On 15th, before me, Peter L. Collins (insert name of notary public), personally appeared PETER L. COLLINS, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, execute the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
RITA A. CAPOBIANCHI  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires February 10, 1998

Signature Rita A. Capobianchi (Seal)

Date: 9-15-97

\_\_\_\_\_  
Stephen S. Whitehead

STATE OF MARYLAND

COUNTY OF Montgomery

On 15th, before me, Stephen S. Whitehead (insert name of notary public), personally appeared STEPHEN S. WHITEHEAD, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his



authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, execute the instrument.

WITNESS my hand and official seal.

RITA A. CAPOBIANCHI  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires February 10, 1998

Signature Rita A. Capobianchi (Seal)

Date: 9-16-97

Alexander A. Bukreyev

STATE OF MARYLAND

COUNTY OF Montgomery

On 9-16-97, before me, JO ANN THOMPSON (insert name of notary public), personally appeared ALEXANDER A. BUKREYEV, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, execute the instrument.

WITNESS my hand and official seal.

Signature Jo Ann Thompson (Seal)

JO ANN THOMPSON  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires 10-31-00

Date: 9-29-97

Katalin Juhasz

STATE OF MARYLAND

COUNTY OF Montgomery

On 9-29-97, before me, Katalin Juhasz (insert name of notary public), personally appeared KATALIN JUHASZ, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, execute the instrument.

WITNESS my hand and official seal.

Signature Rita A. Capobianchi (Seal)

RITA A. CAPOBIANCHI  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires February 10, 1998

Date: 9/15/97

Michael N. Teng  
Michael N. Teng

STATE OF MARYLAND

COUNTY OF Montgomery

On 15th of Sept, before me, Michael N. Teng (insert name of notary public), personally appeared MICHAEL N. TENG, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, execute the instrument.

**RITA A. CAPOBIANCHI**  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires February 10, 1998

WITNESS my hand and official seal.

Signature Rita A. Capobianchi (Seal)

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## In Re Application of:

Brian R. Murphy et al.

Serial No.: 09/444,221

Filing Date: November 19, 1999

For: PRODUCTION OF ATTENUATED RESPIRATORY SYNCYTIAL VIRUS  
VACCINES FROM CLONED NUCLEOTIDE SEQUENCESCommissioner for Patents  
Washington, DC 20231

Group Art Unit: 1642

Examiner: B. Brumback

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02 APR 16 PM 1:51ASSOCIATE POWER OF ATTORNEY

Sir:

The undersigned attorney of record, pursuant to the provisions of 37 C.F.R. §§ 1.33 and 1.34, and M.P.E.P. §402.02, hereby appoints the registrants of Woodcock Washburn LLP, One Liberty Place, 46<sup>th</sup> Floor, Philadelphia, Pennsylvania 19103, telephone (215) 568-3100, as its agents and attorneys to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith.

Done on this 11 day of MARCH, 2002, at Rockville, Maryland.UNITED STATES DEPARTMENT OF  
HEALTH AND HUMAN SERVICES

By:

Printed Name:

Registration No.:

for: Dr. Jack Spiegel, Director, DTD  
Office of Technology Transfer  
National Institutes of Health  
6011 Executive Boulevard, Suite 325  
Rockville, MD 20852  
Telephone (301) 496-7056  
Facsimile (301) 402-0220

DHHS CASE NO. E-142-96/3

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